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Food Conditions and Agricultural Production

By DR. HUBER

Secretary of State in the National Administration of Food and Agriculture, Munich

Translated by E. M. Fogel, Ph.D., University of Pennsylvania

BEFORE the war the German people imported a considerable part of their foodstuffs and feeds. Considering the not especially favorable natural conditions of soil and climate, German agriculture progressed almost as rapidly as German industry. But it was impossible to feed the constantly increasing population with home products, especially so because the population was drifting to the cities in greater and greater numbers. The export of manufactures, and the profits from German shipping and from other German enterprises paid for the foodstuffs imported and the raw materials and aids in production (*Roh-und Hilfsmittel*) required for our industries.

Not only were very considerable quantities of grain, animal fats and dairy products imported for immediate human consumption, but in the decade preceding the war increasingly large quantities of fertilizers to promote greater soil productivity, and feeds (barley, corn, linseed-cake) for stock raising and meat production were imported, although we imported virtually the same quantities of wheat and only a little more of cattle and meat (6 per cent of the total meat consumption). According to Professor Warmbold, German agriculture before the war furnished (deducting the food produced by the aid of imported fertilizers and feeds) about 90 per cent of our vegetable foods, 67 per cent of our meats and fats, 50 per cent of our milk and dairy products, and 70 per cent of our poultry. That is to say, about one-sixth of our popula-

tion depended on foreign countries for food.

The war aggravated the food problem in two ways. First, the enemy blockade stopped the importation of food and raw materials for agricultural purposes almost entirely; furthermore, domestic agriculture was so deranged that in spite of every utmost effort it could not maintain its former production. The war took away 40 per cent of the best male labor, and the same proportion of horses and cattle used on the farms. And the loss was not permanently compensated by the employment of women, children and prisoners of war on the farms. Secondly, we lacked fertilizers, feeds and other farm essentials; only one-third of the average annual quantity of nitrogen and phosphoric acid was put in the soil, and there was less than one-tenth of the usual supply of concentrates available because of the blockade.

As a result of the shortage of imports, farm production declined and compelled the German people to submit to most drastic and oppressive restrictions in food. As a result of the decline in agriculture and the decreased average yield per acre, the total crops sank to less than two-thirds of the normal prewar yield, and potatoes to less than half. The sugar beet, which was the best index to our intensive agricultural industry, has suffered such decreased acreage and yield that there is scarcely enough beet sugar today to meet the most urgent needs of the population; whereas, before the war,

Germany was the principal exporter of beet sugar. From November, 1913, to November, 1919, cattle decreased 12.3 per cent and pigs, 50 per cent; and the average weight of dressed beef, as a result of insufficient feeds, decreased 45 per cent for cattle and 25 per cent for hogs. Before the war, home-raised hogs constituted two-thirds of the meat supply of the population; during the last years of the war the urban meat supply was limited also entirely to cattle of very inferior quality and quantity. The lack of concentrates, furthermore, caused a decrease of almost 50 per cent, in 1919, in the average yield of cow's milk.

In the first place, the end of the war brought about no change of conditions. The blockade was not lifted until a considerable time after the cessation of hostilities and even now the importation of foodstuffs as well as of fertilizers and feeds is limited to the lowest possible quantity necessary because of difficulty in obtaining them, and particularly because of Germany's financial condition and the depreciated mark. It will require years of intensive effort to restore our agriculture.

It must not be forgotten that the peace treaty has deprived Germany of very important territory producing surplus food (*überschussgebiete*). The population of the territory surrendered is not nearly so great as the agricultural area surrendered; for, with the exception of Alsace-Lorraine, most of the country surrendered is agricultural. Apart from the districts where self-determination is permitted, Germany loses 7.5 per cent in population and 14.9 per cent in farm lands. As a result of the self-determination of Nord Schleswig this loss is all the greater. But the seriousness of territorial loss is not realized until one considers the resultant loss in foodstuffs. With the surrender of almost all of Posen and

West Prussia to Poland, Germany loses one of its best grain belts, since those regions provided middle Germany and Berlin especially, with grain. The province of Posen produced one-tenth of all the rye raised in Germany and the same holds true for potatoes, sugar-beets and barley, whereas the population of the province is only one-thirty-fifth of that of the nation. Its wheat crop was one-twentieth of that of the nation, but it must be emphasized that Germany's bread grain is rye and not wheat. West Prussia contributed very considerably to the food and fodder grains and potatoes of Germany. All told, Germany loses, through the peace treaty, 25 per cent of its grain and potato crops, and 10 to 12 per cent of its cattle raised. With the general decline in agricultural productivity, grains decreased from 1913 to 1919 from 30.7 million tons to 15.1 million tons, potatoes from 50 million to 20 million tons, raw sugar from 2.7 million tons to seven-tenths of one million tons.

The food shortage resulting from the blockade and decreased domestic production had frightful effects on the physical and psychical health of the German people. As the war continued, and the shortage became greater, the government had to limit food consumption. Early in 1916, the most important foodstuffs, bread, meat, potatoes, milk, butter, sugar, etc., were rationed. Food shortage reached its lowest point in the ill-famed "yellow turnip winter" of 1916-17, when the potato failure of 1916 compelled the raising of yellow turnips for food. In many cities, either no potatoes at all or at most only one-half pound of potatoes per person per week could be obtained.

An idea of conditions in German cities can be gained from the following table of rations as fixed by the city of

Bochum, and Bochum was one of those cities which had the largest food supply. The following table gives the food rations per person from October 1, 1916 to June 30, 1917:

ance of carbohydrates over albumens and fats and that much of the food was of a poor quality. But the shortage of animal foods (butter, lard, meat, eggs, milk, cheese, etc.) was most acute and

	TOTAL	AVERAGE PER WEEK
Bread	65.50 Kg.	1.68 Kg.
Flour	6.30 "	.16 "
Potatoes	72. "	1.85 "
Yellow Turnips	28. "	.72 "
Meat	9.94 "	.25 "
Sausage	1.95 "	.05 "
Butter	1.40 "	.04 "
Oleomargarine and other fats	1.17 "	.03 "
Eggs	33. "	.85 Egg
Jam, artificial honey and syrup	3.75 Kg.	.10 Kg.
Pastry (teigwaren)	1.85 "	.05 "
Barley	2.60 "	.06 "
Grits	1.12 "	.03 "
Oats products	1.15 "	.03 "
Sago09 "	
Soup flour, potato flour and mixed flour60 "	
Boullion cubes	3. "	
Bone extract and powder10 Kg.	
Pudding powder	3 packs	
Sugar	7.90 Kg.	.20 Kg.
Dried yellow turnips and dried vegetables	1.00 "	.03 "
Raisins20 "	
Beans and peas	1.25 "	.03 "
Cabbage and turnip sauerkraut	1.50 "	.04 "
Herring and mackerel	1. "	
Coffee substitute12 Kg.	
Fruit	1.00 "	
Cheese08 "	
Canned goods50 "	
Spinach20 "	
Powdered chocolate10 "	

During this nine-month period each family also received four cans of desiccated milk and one box of sardines packed in oil. Certain additional quantities of bread and fats were rationed to those who did the hardest and heaviest work, but they were of such small quantity as to be negligible. Milk and toast were given only in special cases of dire need. At times the milk supply of Bochum fell to 7,000 liters per day, as compared to 42,000 liters per day before the war.

In order to realize fully what these conditions meant we must bear in mind that war rations showed a preponder-

grievous. The great lack of fats not only endangered health, but it made the cooking and preparation of food, and especially of vegetables, very difficult. Meat was short of fat, because the cattle were very poorly fed, so that the average meat ration of 135 grams [4.85 oz.]—one-eighth of peace-time consumption—during the last months of the war, could in no wise be compared in quality or food value with the meat consumed in peace times. Bread was often inferior in quality because with the grain shortage it was finally necessary to so grind the grain that the whole bran remained in

the flour. Not only was much of the flour of inferior quality, but it was necessary to adulterate it with raw potatoes, desiccated potato products, barley flour, oatmeal, cornmeal, bean flour, pea flour and finally even turnips; the result of this was that in many districts where there was an exceptionally acute shortage of flour the bread sometimes became almost uneatable. Another serious feature in the food problem was the excessive monotony of food and the increasing sale and use of adulterants and deleterious substitutes—against this the government waged an obstinate battle.

Since the resumption of imports, conditions have improved materially; but they are far from normal. In 1918 public rations were one-half the minimum for an adult as to calories, and about one-fifth or sixth as to fats. As a result of the distribution of foods, flour and fats from foreign countries, there was a temporary improvement in the summer of 1919, but the only difference between government rations in the first half of the present year and the period before the lifting of the blockade is a greater supply of fats.

Since the last years of the war the smuggling of foods has become very common and plays an increasingly large rôle in the food problem. The pressure resulting from years of privation has become so great that the people are no longer willing to submit to administrative restrictions. This and restoration of imports are the most important reasons why the government has, during the last few months, abolished compulsory farming in many districts and reëstablished unlimited trade. In the future, when food is no longer under government control, the government will limit its activities to a general supervision of distribution and prices, and will maintain a system of government distribution of those foods which

are one of the essential bases of subsistence, particularly bread, milk, and, for the time being, sugar. Importation of other necessary foodstuffs like fish, eggs, cheese, vegetables and fruit is also free. Moreover, the efforts of the government are directed toward importing sufficient quantities of foodstuffs, chiefly grain, meat and fats, in order to have large supplies on hand and thus to prevent any food shortage or stoppage, such as was the case a few months ago with bread rations in one of Germany's largest industrial areas.

The future of Germany depends first and foremost on the solution of its food problem. Insufficient food for a period of years has so sapped national strength and vigor that its efficiency is most momentarily impaired. The results are manifest not only in universal loss of weight, but also and more especially in loss of health and increased mortality.

Statistics show a marked increase in deaths from tuberculosis, and it was in this special field that German science had attained such remarkable results; but the war and the blockade have destroyed it all for a long time to come. Among the diseases which came in the wake of the war in especially large numbers are those of the stomach and the intestines, and these are the direct result of poor or bad food.

But saddest of all is the permanent injury which the rising generation is suffering in its development and health. In Prussia, the mortality of children between the ages of one and five was, in 1914, 52,924 and in 1918, 67,369, even though the birth-rate had fallen about 40 per cent during the war. Again, in Prussia, the mortality of children between the ages of five and fifteen rose from 25,730 in 1914 to 50,391 in 1918. The dire increase in mortality in children during the period when they are expected to attend school

is doubtlessly due to lack of milk, and of albuminous and nitrogenous food.

Among adults the effects of undernourishment are manifested, first, in lack of efficiency and disinclination to work, not to mention the increase in sickness and death-rate. These constitute the greatest obstacle to the rehabilitation of German agricultural life, and thus the ability to meet the requirements imposed on Germany by the peace treaty; secondly, in a tendency to radical views and ventures which are intensified by unemployment and constantly threaten the safety of state and society. Therefore, for economic and political reasons, we must take vigorous measures at the earliest possible moment to bring about an improvement in the food problem.

In this Germany needs the most far-reaching support of the other nations. Doctor Hermes, the German National Food Administrator, repeatedly emphasized at the Spa Conference and in conversations with the English and Italian Food Administrators that, without a material increase in food supplies from other countries, it will be utterly impossible to restore the health and efficiency of German labor. Unless the miners receive better and more food it will be impossible to meet the Spa demands for coal and the miners have declared their willingness to increase the required output if they are given sufficient food.

At the present time, German farmers supply the cities with at least three-fifths of the minimum food requirements. The remainder must be made up partly by food imports for immediate human consumption, and partly by importing those things which will enable plant and animal production to be increased. The total value of these minimum imports necessary to restore the German food supply to a normal condition amounts to more than three

and one-half million gold marks. The payment of this sum will not be possible without extensive credits.

Naturally these imports are only a makeshift. In view of the indemnities imposed by the peace treaty the German people must strive to derive their food supply from domestic sources as far as possible. The presumption is in our favor in this respect, because German agriculture was in such a brilliant state of development before the war and surpassed the crops of most other countries in spite of a less favorable climate. This spirit of progress is still alive in the German farmer, although it is obstructed by the great difficulties in farming which continue unabated as the effects of the war and the conditions resulting therefrom.

The agricultural areas have been impoverished by the war-years of soil-robbing. Buildings and stock are worn out. The reestablishment of agricultural productivity requires enormous means; especially so, because of the extraordinary rise in prices since the beginning of the year 1919, which is partly due to the depreciation of the mark. And so a considerable number of farmers hesitate to spend large sums of money for commercial fertilizers because either they do not have enough money to pay for them or it seems to them to be a poor investment when compared with the low prices which they receive for their products. But the imperatively necessary drop in prices for farm stock depends essentially on a decrease in the cost of industrial production, and this latter is again influenced by the cost of food. Germany is thus in a fatal circle: lack of food causes insufficient production, and permanent increase in wages, the result of which is few and dear products from the factory, and high prices of manufactures retard agricul-

tural production, so that prices keep on rising constantly unless this circle is broken somewhere. And this can be accomplished only with the aid of food from the other nations.

An especially great obstacle to agricultural production is the dire lack of fertilizers containing phosphoric acid. In the fertilizer year 1919-20, German farmers obtained only 139,000 tons of phosphoric acid—only one-fifth of the prewar period, especially because through the loss of the mines in Luxemburg, Lorraine and the Saar Valley, the available Thomas slag decreased at least 600,000 tons and on the basis of peace-times production, about 1.2 million tons. German farms will need at least 500,000 tons of phosphoric acid annually. Under the best possible conditions of production and importation of Thomas slag at least 235,000 tons must be obtained by the importation of at least 500,000 tons of raw phosphate (*Rohphosphate*).

In order to overcome the shortage of phosphoric acid, it is to the mutual

advantage of both Germany and the United States that Germany should exchange potash for phosphate.

The enormous nitrogen-producing plants constructed during the war will in the future enable Germany to meet its demands for nitrogen-containing fertilizers, provided that the coal necessary for nitrogen production can be obtained. The year 1919-20 shows a marked increase in nitrogen production over 1913-19, but it is not sufficient to make up for the shortage during the war.

Germany will likewise be able to buy its concentrates from the United States, and so increase its production of meats, fats and milk.

The German people feel with deep gratitude the evidences of generosity which are expressed in the great aid by the American relief societies to starving German children. Through their noble-minded acts the dire need of the poorest and most innocent victims of the misery caused by the war will at least be ameliorated.